Part Five

Urban and Community Forestry Issues

Rhode Island's urban and community forests face a variety of challenges. Among the key issues are lack of knowledge of the value of trees, insufficient data on tree resources, little or no legal protection for tree resources, insufficient investment in tree resources, and lack of foresight and planning for protection of tree resources in concert with new development.

Rhode Island takes its urban and community forests for granted…

Perhaps because the state has over a billion of them, Rhode Islanders tend to take a relaxed attitude about trees.

To a large extent, our assumption concerning trees seems to be not drastically different from the "frontier" mentality of our ancestors: the abundance of trees makes their intrinsic value to us appear inconsequential. The reality is quite the opposite: as documented in Part Three, trees have real economic value; their worth as public goods in many instances far outstrips their market value for timber, pulp, or firewood. The public, while appreciating trees on an aesthetic level, may not realize the valuable benefits trees provide, until they are gone.

The abundance of trees makes them appear inconsequential to us.

All Rhode Islanders pay real costs for forest land and trees cleared for development. The costs are not perceived as "real" because they do not appear as a line item in state and municipal budgets, or show up in any identifiable way on citizens' tax bills. Still, we are all paying the price, in terms of higher costs to cool our homes and

The public often does not realize the valuable benefits trees provide, until they are gone.

offices and to treat pollution, less attractive communities, fewer recreation choices, impacted wildlife, and a poorer quality environment overall.

Forest land use studies indicate that Rhode Island lost 28,000 acres of forest from 1970 to 1988. Based upon forest density surveys. This equates to a loss of over 83,000,000 trees, a significant decrease in Rhode Island's environmental net worth--the state's legacy of natural wealth.

The 28,000 acres of forest land lost in Rhode Island from 1970 to 1988 represent a real loss in the environmental net worth of the state.

We don't know enough about our urban and community forests…

The state of our knowledge of our urban and community forests is imperfect. For the most part, we do not map, analyze, and study our forests as intensively as many other assets.

Compared to the research and data bases maintained for other "community infrastructure" (schools, utility and communication lines, etc.), tracking the status of our "green" infrastructure---community forest resources---is rudimentary. Detailed statistics on urban forests are particularly hard to come by on the state level. Land use surveys are done sporadically by the state (1960, 1970, 1975, 1988); but these surveys, necessarily gross in scale and resolution, do not include urban forest trees and offer only the broadest statistics on rural forest lands. Rhode Island has not conducted a statewide canopy cover survey such as has been done for metropolitan regions in other areas of the country. Such studies (as distinguished from standard land use surveys) provide statistics on tree coverage and density from which calculations of the value of ecological functions and benefits provided by forested areas can be derived.

1 RI Statewide Planning Program, Land Use Trends in Rhode Island 1961-1988. Technical Paper Number 146. Providence, RI. 1998 & RIGIS Land Use and Wetlands Coverages (1988), and Dickson, D.R., and McAfee, C.L. Forest Statistics for Rhode Island---1972 and 1985. USDA Forest Service. NE Forest Experiment Station. Resource Bulletin NE-104. Broomall, PA. 1988.

2 Dickson, D.R., and McAfee, C.L. Forest Statistics for Rhode Island---1972 and 1985. USDA Forest Service. NE Forest Experiment Station. Resource Bulletin NE-104. Broomall, PA. 1988.

Federally sponsored forest surveys are also infrequently done (1972, 1985, 1999). These assess forest characteristics in more detail than standard land use studies, but focus mainly on large tracts of commercial forest.

At the local level, only five or six communities have completed basic inventories of their *public* trees (street trees and park trees). Although computer-aided programs are available that allow metropolitan areas to develop a comprehensive inventory of *public and private* trees and document the benefits provided by forest resources, neither the state nor any community (or group of communities) has undertaken this task in Rhode Island. Most cities and towns do not know how many trees they have, how healthy or sickly their forest is, and how many trees they gain or lose each year.

Most communities have not conducted comprehensive tree inventories.

The net impact of this lack of data is that we do not have a good understanding of the status, condition and trends affecting our urban and community forests and cannot document the dollars and cents values of our trees. Without good data, communities are limited in undertaking systematic planning for tree resources and in adequately documenting the benefits that trees provide to the community as a rational legal basis for protecting trees threatened by development.

Not knowing enough about urban forests extends to the realm of public knowledge and utilization of technical information. Although there is a growing body of literature and educational materials available; there remains a keen need to deliver this information in a way that develops a broad public appreciation of the value and importance of urban forest resources and institutionalizes the proper technical expertise in the urban forest, community development, and public infrastructure communities regarding the health requirements of urban trees. Key urban forest education and information needs identified in a 1998 survey completed by over 200 urban forest managers from the Forest Service's northeast region (Maine to Minnesota) are listed in table 5.1.

TABLE 5.1
URBAN FOREST HEALTH EDUCATION AND INFORMATION NEEDS

Major Issue	Specific Education and Information Needs Cited
Hazard tree evaluation and management	Evaluation and management techniques; practical "how-to" manual for municipal aborists; inventory systems; species-specific hazard tree evaluation data; liability issues; costs associated with hazard tree losses; role of hazard trees in natural disasters
Disease Management and Control	Updates on new and common diseases; common abiotic disorders; field diagnostic techniques; oak wilt; declines of maple, and juniper; ash yellows; Verticillium wilt; girdling root syndrome; root decay; biologically and environmentally-friendly control strategies
Tree Health Monitoring	Assessment techniques for large and small communities; develop "How To" brochure for non-professionals; guidelines on organizing a statewide program
Natural Disaster Planning & Mitigation	Legal responsibilities; detailed example of systems that work; regional planning strategies; organizing natural disaster response teams; timeline for post disaster activities; coordination of municipalities and utilities; sources of financial and technical assistance
Insect Management and Control	Updates on new and common insect pests; biological and environmentally-friendly control strategies; insecticides: timing and efficacy; insect biology and ecology; gypsy moth; woolly adelgid; Japanese beetle; borers and mites
Minimizing Construction Damage	Management guidelines to minimize tree damage during construction; proper installation of fencing; use of mulch to reduce soil compaction; how to maintain soil quality; impacts of grade changes; mitigating existing problems (soil compaction, grade changes, root damage); education of contractors and utility companies on the value of trees and proper tree management techniques during construction
Proper Site and Species Selection	General guidelines; species specific information on tree care maintenance needs; new varieties of plants; modification and improvement of urban planting sites
Proper Tree Pruning	Proper pruning techniques; pruning guidelines for young vs. mature trees; utility and street clearance issues
Proper Fertilization and Watering Techniques	Guidelines for young vs. mature trees: how to and when; site-specific recommendations: sandy vs. clay soils; trees in decline; soil testing and fertilization
Other	Street tree inventory systems with GPS/GIS; public education: inform city leaders and policy makers on the values of trees and urban forest health issues; urban forestry publication listing; fund-raising techniques

3 Urban Forest Health Assessment Survey: Results and Recommendations. U.S. Forest Service/Northeastern Area State and Private Forestry. St. Paul, MN. January, 1998. P. 12.

We don't plan comprehensively for urban and community forests…

This plan is the first statewide plan addressing forestry from the urban and community perspective.

Because we do not accord tree resources their value as community assets, our efforts to plan systematically for their management and enhancement are also limited.

There are few imperatives or incentives for communities to plan for their forest resources. Apart from the mandates to plan for public trees found in a few municipal tree ordinances, communities face minimal requirements and find little guidance on planning for their forest resources. This plan, the first statewide plan in Rhode Island focused on urban and community forestry, attempts to encourage more attention to planning for community forests. Its policies, together with those of the Forest Resources Management element of the State Guide Plan must be reflected in future updates of local comprehensive plans.

State standards for local comprehensive plans do not give a high profile to planning for community tree resources.

The state's local planning enabling legislation, completely updated in 1988, did not speak to planning for community forests. Although it required community plans to include a "natural resources element" inventorying and setting policies for significant natural resources, including "natural vegetation systems," the broad legislation did not specifically mention planning for community or urban forests. The handbook developed by the state to guide communities in preparing their first plans under this law did not give a high profile to planning for tree resources, either as a natural resource or as community infrastructure.

Many community comprehensive plans do not address tree preservation or maintenance on a community-wide basis.

Without the benefit of a state policy framework for urban and community forests, lacking detailed data on forest status and trends, and absent specific guidance on how to plan for their tree resources, it is not surprising that the priority accorded to urban and community forests in the comprehensive plans completed by communities in the early 1990s tended to be modest. Most local plans did not map or inventory their forest resources in any detail; some included only broad goals for protecting forest

resources. Only a few plans outlined a progressive agenda for protection and enhancement of community tree resources.

When it comes to site development planning, the lack of detailed state or local policies leaves the development community unassisted (and unfettered) by guidance on the public's objectives for tree resources. This means that trees are often the last resource thought about in site planning (if they are thought about at all).

Development site planning and design too often ignores tree resources.

Because trees are not accorded the same or similar protection by law as other natural resources, (see below) they are given less stature in land development decisions. Developers build know that wetlands, water supplies, and coastal features are protected by law and regulation; so, when planning sites, they locate roads and new buildings to minimize impact upon these resources. Developers also avoid impacts upon historic and archaeological resources, farmland, and rare species habitats because they know that state and local policies encourage the protection of such areas, and the approval process will be smoother if their plans avoid these areas. Forest resources, falling outside all of these protected categories, often cover much of a site's area but are given less consideration in site planning.

Although trees often constitute the bulk of a development site, protection of tree resources is generally given little consideration in site planning.

Because the definition of land development projects and subdivisions in state law does not include land clearance, land may be clear-cut and topsoil stripped or left to wash away long before a local permit for a development project is ever sought. Unless landowners recognize their self-interest in adhering to best management practices, or unless other local ordinances (e.g., soil erosion and sediment control ordinance, or tree conservation ordinance) require conservation practices; the development review process may be limited to approving the layout of roads and/or buildings on what has already been made a barren site. Although a site might have been a productive forest a few months or years ago, by the time a development project is before a local board for approval, there may be no trees left to protect. In this situation, the local planning board, and the

Trees and soil may be stripped from a site months or years before a permit is sought for a development project, limiting options and adding to the expense for making the ultimate development of a barren site environmentally sound and aesthetically pleasing.

developer of the land have only limited, expensive options for making the ultimate development of such a site environmentally sound and aesthetically pleasing.

Our laws don't adequately protect urban and community tree resources from development…

Tree resources lack the level of legal protection accorded other important natural resources.

Perhaps it is because trees appear so ubiquitous that the public interest in trees is reflected less in state and local law than other natural resources. Under state law, trees on private lands are considered private property. Although they may be providing significant benefits to the community, there is only limited legal recognition of the public's interest in the continued enjoyment of such benefits.[4] State statutes set penalties for cutting trees without permission of the landowner and for destruction of woodlands by arson, but erect no significant obstacles to rightful owners of trees desiring to remove trees from their property.[5] State law requires that commercial cutting operations on tracts of five acres be registered with DEM and adhere to best management practices.[6]

The ordinances of most Rhode Island communities offer limited recognition of the public interest in private tree resources affected by development.

Similarly, trees on private lands are generally not protected by local ordinances from cutting or clearing. Only about half of Rhode Island municipalities have requirements relative to tree resources in their subdivision or zoning ordinances. Most of these requirements address planting of new trees during development, with the number of trees planted generally left to the discretion of the planning board. Some ordinances require the planting of trees only "where needed."

4 The major exception is forested wetlands, which are protected by state statute and regulation.
5 RI General Laws § 11-44-2 et.seq. RI General Laws § 11-4-7.
6 RI General Laws § 2-15-1 et.seq.

Absent any standards, replacement of trees may be quite minimal. As few communities give incentives for open space or compact style development, options for flexible development siting to avoid impact on trees are usually limited. No Rhode Island community has land development standards similar to those gaining favor in rapidly-urbanizing areas of the country (Atlanta, Seattle, and Washington, DC areas. Such ordinances include tree protection policies, canopy maintenance standards, and/or numerical tree replacement formulas to insure that new development projects retain a prescribed level or density of tree coverage within a site while allowing flexibility between existing tree preservation or replacement. Establishing such canopy coverage standards helps insure that new development does not overwhelm the ability of the forest to operate as "green infrastructure," providing environmental benefits for both current and new residents.

Tree conservation or in-kind replacement formulas are generally not required of new private development in Rhode Island communities.

Land development regulations seeking to protect tree resources need to be carefully crafted to avoid conflicting with existing state laws, such as the Right to Farm Act, or infringing upon the legitimate rights of private landowners. Communities also need to guard against the miss-application of regulations intended to control land development to the detriment of the economic viability of commercial forest operations that actually help to conserve rural forest lands.

Ordinances seeking to protect tree resources must be carefully crafted and applied to avoid impacting the viability of commercial forest operations that actually help to conserve rural forest lands.

We don't invest sufficiently in trees…

The sums devoted by most public budgets to maintenance and enhancement of community tree resources range from minimal to woefully inadequate. Only one-third of Rhode Island communities invest the amount recommended by national benchmarks.

Although the state passes through federal grants to the Rhode Island Tree Council and to communities, the State's own investment in urban and community tree resources is minimal.

State resources devoted to urban and community forestry are essentially limited to expenditures by the DEM's Division of Forest Environment to support the Urban and Community Forestry Program Coordinator and to provide management services for forest landowners. State agencies also spend small parts of their operating budgets on tree maintenance (pruning, removal, etc.) that is incidental to landscape maintenance for their facilities (parks, highway right-of-ways, buildings, etc.).

Despite the many economic values of trees, most communities under-invest in sustaining and enhancing their forest infrastructure.

In terms of capital funding, state recreation and open space bond funds are made available periodically to assist communities (up to 75 percent of the costs) in purchasing land as greenspace and greenways, including public town forests, and to support (50 percent of the costs) tree planting in conjunction with local park and recreation facility development projects. State funds also pay up to 20 percent of the costs for the landscaping (including trees) of new or improved transportation facilities. While these contributions are not inconsequential, community forest management is not their primary purpose.

With a few notable exceptions, the majority of Rhode Island communities appear to regard capital and operating expenditures for trees as a luxury, rather than an investment in the community's infrastructure. Indeed, municipal investments in trees seem to be regarded as so unimportant that they are not systematically tracked on a regular basis. The last attempt, by DEM's Division of Forest Environment in 1994, found that, when communities budget for trees at all, it is mostly for tree removal and emergency pruning as part of their Public Works or Parks operating budgets.[8]

In terms of capital expenditures for replacing and expanding tree resources, the overwhelming majority of communities rely upon external funding sources---America the Beautiful or Community Development Block Grants---to support tree planting programs.

8 Payton, B. "1994 Municipal Needs Assessment". (unpublished survey data)

Overall, counting funds spent from all sources, only one-third of Rhode Island's municipalities were found to be spending at least $2 per capita—the benchmark recommended for a viable local effort by the National Arbor Day Foundation's Tree City USA Program---on community tree resources and programs in 1994.

Two-thirds of Rhode Island communities budget less for trees than the $2/capita standard recommended by the National Arbor Day Foundation's Tree City USA program.

Several notable exceptions to this pattern are the urban communities that have developed a sustaining municipal tree program. Newport's budget is $178,000 for 1998-9, a level of $7.40 per capita. Providence also regards trees as a priority, investing a total of $4 per capita ($625,000) in tree resources in 1996 (this includes contributions from the Mary Elizabeth Sharpe Street Tree Endowment—see Part Four). East Providence also makes a substantial commitment, budgeting approximately $125,000/year for its program. Warwick and South Kingstown have also increased their investments in tree resources, making $20,000-$80,000 local capital commitments to planting and maintenance programs in recent years.

Without proper maintenance, urban trees are more susceptible to stress, disease, and decline.

The comments of tree wardens at a recent workshop attests to the inadequacy of local resources for tree management. One community's warden cited a backlog of three years for "non-emergency" tree maintenance.[9] Another spoke of taking down 120 trees per year, while having resources to plant around 30. Still another takes down about 60 trees per year and plants about 30. These removal/replacement comments are particularly telling, in view of a state law *mandating* replacement of trees cut on public property on an equivalent diameter basis.

The problem with not investing sufficiently in trees is that we lose them, and their public benefits prematurely and (unless we replace them) permanently. Urban street trees, in particular, are

9 Remarks of municipal tree wardens from East Providence, Barrington, and Warren, RI. RI Tree Council Tree Stewards Education Workshop. June 17, 1998. Bristol, RI.

A 1998 survey of over 200 urban forest managers found the following threats to the health of the northeast region's urban forests:

- **Lack of care and maintenance**
- **Environmental stress**
- **Insects and diseases**
- **Improper site or species selection**
- **Lack of species diversity**
- **Improper planting techniques**
- **Old age**

more susceptible to stress, disease, and premature decline if they are not properly maintained with a program of fertilization, pruning, and irrigation when needed. A recent urban forest health assessment completed by over 200 urban forest managers from across the Forest Service's northeast region.[10] The survey found that only 23% rated the overall health of their urban forest resources as *excellent* or *good*; 27% rated urban health as *fair*, and 16% ranked the health of the urban forest they were responsible for as *poor*. The most frequently-cited problems identified included: "lack of tree care and maintenance," urban environmental stressors," "insect and disease pests," "improper species/site selection," "lack of species diversity," "improper planting techniques," and the "old age of urban forests."

Deferred tree resource maintenance is a concern not only for urban forest managers; but also for municipal governments, as it creates liability for communities if hazardous trees or limbs are left unattended. Unpruned street trees may also obscure vision along roadways, constituting a hazard.

Communities need not shoulder the entire burden of street tree planting and maintenance (indeed, the best programs involve neighborhood residents who benefit most from the trees as volunteer stewards); but it is essential that communities contribute resources for supplies, equipment, and staff to organize and direct such efforts.

Pressed with increasing costs for existing services, mandates for new programs, and public demands for fiscal austerity, it is not surprising that Rhode Island governments tend to look the other way when it comes to maintaining and enhancing their green infrastructure. Trees are abundant, they (falsely) appear to be self-maintaining; and until they are gone, no one seems to miss them.

10 Pokorny, J.D. Pp. 7-8.

Supplementing the sums set aside by state and local governments are federal grants and investments made in tree maintenance by private entities, including utilities. Although long cast as having a negative impact on tree resources, utilities make significant investments in street tree maintenance and can be important allies of local tree programs. Newport, Middletown, and Pawtucket have worked out arrangements with Eastern Utilities Co.--the local electric utility—under which the company pays for replacement trees when it takes down trees that are hazardous to its overhead wires.

Private utility companies can be important allies of local tree programs, bringing significant resources for street tree management and replacement.

The bottom line... *We are losing our urban and community forests*

Rhode Island's urban and community forests are declining, and the public values they provide are eroding. Unless we better understand, plan for, legally protect, and invest in the management of urban and community forest resources, the state's tree resources will continue to erode, and 21st century Rhode Island will be a significantly less green place.

Across the state we're cutting or clearing more trees than we plant

Our communities will lose more of the grace and charm that trees provide. We will continue to diminish the water pollution abatement, air pollution mitigation, runoff control, noise attenuation, and other environmental services that trees provide, and will have to substitute expensive, engineered solutions to these problems. We will pay more than we should to heat and cool our buildings. We will have fewer shady places to sit under on hot summer days. Our city streets will be hotter. Familiar places will seem less familiar… our roots to the past less solid.

Losses big and small, a price to the pocket, a piece of the soul of the place. We can avoid these losses if we are determined.